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On barge-carrying vessels having horizontal barge levels, separate barge levels are required and the barges may not be in the same vertical line.

(4) "Separated longitudinally by an intervening complete compartment or hold from" means, for barge-carrying vessels with vertical holds, that separation by an intervening hold or engine room is required. On barge-carrying vessels having horizontal barge levels, separate barge levels and a longitudinal separation by at least two intervening barge spaces are required.

(k) *Segregation requirements for ferry vessels:* A ferry vessel (when operating either as a passenger or cargo vessel) that cannot provide the separation required in this section may carry incompatible hazardous materials in separate transport vehicles if they are stowed to give the maximum possible separation.

[Amdt. 176-30, 55 FR 52690, Dec. 21, 1990, as amended at 56 FR 66282, Dec. 20, 1991; 57 FR 45465, Oct. 1, 1992; Amdt. 176-34, 58 FR 51533, Oct. 1, 1993; Amdt. 176-38, 60 FR 49111, Sept. 21, 1995; 64 FR 10781, 10782, Mar. 5, 1999]

§ 176.84 Other requirements for stowage and segregation for cargo vessels and passenger vessels.

(a) *General.* When column 10B of the §172.101 table refers to a numbered or alpha-numeric stowage provision for water shipments, the meaning and requirements of that provision are as set forth in this section. Terms in quotation marks are defined in §176.83.

(b) *Table of provisions:*

Code	Provisions
1	[Reserved]
2	Temperature controlled material.
3	Do not stow with high explosives.
4	[Reserved]
5	[Reserved]
6	Emergency temperature material.
7	[Reserved]
8	Glass carboys not permitted on passenger vessels.
9	Glass carboys not permitted under deck.
10	Glass bottles not permitted under deck.
11	Keep away from heat and open flame.
12	Keep as cool as reasonably practicable.
13	Keep as dry as reasonably practicable.
14	For metal drums, stowage permitted under deck on cargo vessels.
15	May be stowed in portable magazine or metal locker.
16	No other cargo may be stowed in the same hold with this material.
17	Segregation same as for flammable gases but "away from" dangerous when wet.

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Code	Provisions
18	Prohibited on any vessel carrying explosives (except explosives in Division 1.4, Compatibility group S).
19	Protect from sparks and open flames.
20	Segregation same as for corrosives.
21	Segregation same as for flammable liquids.
22	Segregation same as for flammable liquids if flash point below 61 °C (142 °F).
23	Segregation same as for flammable liquids if flash point between 23 °C (73 °F) and 61 °C (142 °F).
24	Segregation same as for flammable solids.
25	Shade from radiant heat.
26	Stow "away from" acids.
27	Stow "away from" alkaline compounds.
28	Stow "away from" flammable liquids.
29	Stow "away from" ammonium compounds.
30	Stow "away from" animal or vegetable oils.
31	Stow "away from" combustible materials.
32	Stow "away from" copper, its alloys and its salts.
33	Stow "away from" fluorides.
34	Stow "away from" foodstuffs.
35	Stow "away from" all odor-absorbing cargo.
36	Stow "away from" heavy metals and their compounds.
37	Stow "away from" hydrazine.
38	Stow "away from" all other corrosives.
39	Stow "away from" liquid halogenated hydrocarbons.
40	Stow "clear of living quarters".
41	Stow "away from" mercury and its compounds.
42	Stow "away from" nitric acids and perchloric acids not exceeding 50 percent acid by weight.
43	Stow "away from" organic materials.
44	Stow "away from" oxidizers.
45	Stow "away from" permanganates.
46	Stow "away from" powdered metals.
47	Stow "away from" sodium compounds.
48	Stow "away from" sources of heat.
49	Stow "away from" corrosives.
50	Stow "away from" sources of heat where temperatures in excess of 55 °C (131 °F) for a period of 24 hours or more will be encountered.
51	Stow "separated from" acetylene.
52	Stow "separated from" acids.
53	Stow "separated from" alkaline compounds.
54	Stow "separated from" animal or vegetable oils.
55	Stow "separated from" ammonia.
56	Stow "separated from" ammonium compounds.
57	Stow "separated from" chlorine.
58	Stow "separated from" cyanides.
59	Stow "separated from" combustible materials.
60	Stow "separated from" chlorates, chlorites, hypochlorites, nitrites, perchlorates, permanganates, and metallic powders.
61	Stow "separated from" corrosive materials.
62	Stow "separated from" diborane.
63	Stow "separated from" diethylene triamine.
64	Stow "separated from" explosives.
65	Stow "separated from" flammable substances.
66	Stow "separated from" flammable solids.
67	Stow "separated from" halides.
68	Stow "separated from" hydrogen.
69	Stow "separated from" hydrogen peroxide.
70	Stow "separated from" mercury salts.
71	Stow "separated from" nitric acid.

Code	Provisions	Code	Provisions
72	Stow "separated from" nitrogen compounds.	112	Packaging Group II for concentrations not less than 50 percent and Packaging Group III for concentrations less than 50 percent.
73	Stow "separated from" chlorates.	113	Packaging Group II if concentrations does not exceed 60 percent acid.
74	Stow "separated from" oxidizers.	114	Corrosive subsidiary risk label required unless concentration is less than 80 percent.
75	Stow "separated from" permanganates.	115	If packaged in glass or earthenware inner packagings in wooden or fiberboard outer packagings, the maximum quantity on any vessel is 500 kg (equivalent to 450 liters).
76	Stow "separated by a complete compartment or hold from" organic peroxides.	116	In a cargo space capable of being opened up in an emergency. The possible need to open hatches in case of fire to provide maximum ventilation and to apply water in an emergency and the consequent risk to the stability of the ship through flooding of the cargo space should be considered before loading.
77	Stow "separated longitudinally by a complete compartment or hold from" explosives.	117	In a clean cargo space capable of being opened up in an emergency. In the case of bagged fertilizer in freight containers, it is sufficient if in the case of an emergency, the cargo is accessible through free approaches (hatch entries) and mechanical ventilation enables the master to exhaust any gases or fumes resulting from decomposition. The possible need to open hatches in case of fire to provide maximum ventilation and to apply water in an emergency and the consequent risk to the stability of the ship through flooding of the cargo space should be considered before loading.
78	Stow "separated longitudinally by an intervening complete compartment or hold from" explosives.	118	Stowage—Category D, Category E freight containers and pallet boxes only. Ventilation may be required. The possible need to open hatches in a case of fire to provide maximum ventilation and to supply water in an emergency, and the consequent risk to the stability of the ship through flooding of the cargo space, should be considered before loading.
79	The maximum net quantity in one package for this material shipped aboard a passenger vessel is limited to 22.7 kg (50 pounds).	119	Double strip stowage recommended.
80	Toy torpedoes must not be packed with other special fireworks.	120	Provide good surface and through ventilation.
81	Under deck stowage permitted only if an indicating substance such as chloropicrin has been added.	121	Packaging group III when the flash point of the flammable liquid is 23°C (73°F) or above.
82	Under deck stowage is permitted only if containing not more than 36 percent by weight of hydrazine.	122	Stow "separated from" infectious substances.
83	[Reserved]	123	Stow "away from" infectious substances.
84	Under deck stowage must be in well-ventilated space.	M1—M6	[Reserved]
85	Under deck stowage must be in mechanically ventilated space.		
86	Stow "separated by a complete compartment or hold from" explosives Division 1.3.		
87	Stow "separated from" Class 1 (explosives) except Division 1.4.		
88	Stow "separated by a complete compartment or hold from" Class 1 (explosives) except Division 1.4.		
89	Segregation same as for oxidizers.		
90	Stow "separated from" radioactive materials.		
91	Stow "separated from" flammable liquids.		
92	Stow "separated from" powdered materials.		
93	Stow not accessible to unauthorized persons on passenger vessels.		
94	Plastic jerricans and plastic drums not permitted under deck.		
95	Stow "separated from" foodstuffs.		
96	Glass carboys not permitted under deck on passenger vessels.		
97	Stow "away from" azides.		
98	Stow "away from" all flammable materials.		
99	Only new metal drums permitted on passenger vessels.		
100	Stow "away from" flammable solids.		
101	Stow "separated from" iron oxide.		
102	Stow "separated from" all odor absorbing cargoes.		
103	Only to be loaded under dry weather conditions.		
104	Stow "separated from" bromine.		
105	As approved by the Competent Authority of the country concerned.		
106	Stow "separated from" powdered metal.		
107	Stow "separated from" peroxides and superoxides.		
108	The transport temperature should be indicated on the tank.		
109	Label as a flammable liquid if flash point is 61 °C (142 °F) or below.		
110	Packaging Group II if concentration does not exceed 70 percent acid.		
111	If concentration exceeds 50 percent acid, notes 66, 74, 89, and 90 apply.		

(c) *Provisions for the stowage of Class 1 (explosive) materials:* (1) Unless otherwise specified in column 10B of the § 172.101 table, explosive substances and explosive articles must be stowed as follows:

(i) *On deck:* In containers or the like.

(ii) *Under deck:* Ordinary stowage.

(2) The following notes in column 10B of the § 172.101 table apply to the transport of Class 1 (explosive) materials by vessel:

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Note	Provision
1E	Cargo vessel, on deck, in containers or the like.
2E	Cargo vessel, on deck, in portable magazines.
3E	Cargo vessel, on deck, secured to the vessel's structure.
4E	Cargo vessel, under deck, Magazine, Type A.
5E	Cargo vessel, under deck, Magazine, Type B.
6E	Cargo vessel, under deck, Magazine, Type C.
7E	Cargo vessel, under deck, Ordinary Stowage.
8E	Cargo vessel, under deck, Special Stowage.
9E	Passenger vessel, stowage as for cargo vessel.
10E	Magazine, Type B, if in effectively sealed dust-tight packages; otherwise, Magazine, Type A.
11E	On-deck portable magazine must be steel.
12E	Stowage as specified by Competent Authority.
13E	On deck, in containers not exceeding 2.5 metric ton gross per container or group. There may not be more than 2 such containers or groups; they must be separated from each other, and from any other explosive substance or article by at least 9 m (30 feet). Containers or groups must be at least 9 m (30 feet) from the bridge or accommodation.
14E	On deck, in steel portable magazines or steel freight containers.
15E	On-deck, containers must be leakproof.
16E	On deck, in containers or sheeted stacks. The gross weight of each stack or group of containers may not exceed 2.5 metric ton. There may not be more than 2 stacks or groups of containers; they must be separated from each other, and from any other explosive substances or articles by at least 9 m (30 feet). Stacks or containers must be at least 9 m (30 feet) from the bridge or accommodation.
17E	On deck stowage is recommended.
18E	For international shipments, stow in the same manner as is required for "cartridges for weapons' inert projectile" UN 0012, Division 1.4S.
19E	Substances which contain ammonium nitrate or other ammonium salts must be stowed "away from" Explosives, Blasting, Type C, UN 0083.
20E	Stow in accordance with §176.84(c)(3) of this subchapter.
21E	Cargo space ventilation must be carefully controlled to avoid excessive condensation.
22E	May not be stowed together with explosive substances containing ammonium nitrate or other ammonium salts.
23E	Segregate from other Class 1 (explosive) materials in the same manner as is required for flammable liquids.
24E	Passenger vessels, on deck or under deck, in portable magazines only.
25E	Passenger vessels, in containers or the like, on deck only.
26E	Cargo vessel, on deck, in containers or the like (non-metallic lining is necessary if not in sealed dust tight packages).
27E	Cargo vessel, on deck, in containers or the like (non-metallic lining is necessary).

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Note	Provision
28E	Cargo vessel, when items are transported as projectiles or cartridges for guns, cannons, or mortars, notes 1E and 7E are applicable. All other times, notes 14E, 15E, and 8E are applicable.

(3) Explosive articles designated by special provision "20E" in column 10B of the 172.101 table must be stowed as follows:

(i) Projectiles for guns, cannon, or mortars:

(A) *On deck*: in containers or the like.

(B) *Under deck*: ordinary stowage.

(ii) All other types:

(A) *On deck*: in steel portable magazines or steel freight containers which are capable of preventing leakage of their contents.

(B) *Under deck*: Special stowage.

[Amdt. 176-30, 55 FR 52693, Dec. 21, 1990, as amended at 56 FR 66282, Dec. 20, 1991; Amdt. 176-43, 62 FR 24742, May 6, 1997]

Subpart E—Special Requirements for Transport Vehicles Loaded With Hazardous Materials and Transported on Board Ferry Vessels

§ 176.88 Application.

The requirements in this subpart are applicable to transport vehicles containing hazardous materials being transported on board ferry vessels and are in addition to any prescribed elsewhere in this subchapter. Vessels in a service similar to a ferry service, but not over a designated ferry route, may be treated as a ferry vessel for the purpose of this subpart if approved in writing by the District Commander.

[Amdt. 176-1, 41 FR 16110, Apr. 15, 1976, as amended by Amdt. 176-1A, 41 FR 40690, Sept. 20, 1976]

§ 176.89 Control of transport vehicles.

(a) A transport vehicle containing hazardous materials may be transported on board a ferry vessel, subject to the following conditions:

(1) The operator or person in charge of the vehicle shall deliver to the vessel's representative a copy of the shipping papers and certificate required by §§176.24 and 176.27;